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ABSTRACT

This study was conducted to develop methods of providing effective vocational education for disadvantaged students in rural areas, including improvement in vocational educators' attitudes and teaching methods with respect to teaching the disadvantaged. A random sample of 20 rural high schools in northwest Michigan with less than 400 students in Grades 9 through 12 was divided equally into a control and an experimental group. Vocational teachers from 18 of the schools participated in the study. Two Likert-Type scales were used to measure teachers' attitudes toward teaching the disadvantaged and the attitudes of the disadvantaged students toward vocational education. An additional instrument was developed to determine teachers' knowledge about teaching disadvantaged youth. Following an in-service program, teachers were again tested for attitude and knowledge. From the findings, the study concluded that an in-service teacher education program can significantly increase the effectiveness of vocational education for disadvantaged students in a heterogeneous classroom and should be encouraged. Finding that there were often too few disadvantaged students in any one class to justify a separate class for those with special needs, the study recommended that programs for the disadvantaged in small rural schools be part of regular vocational programs. (BH)

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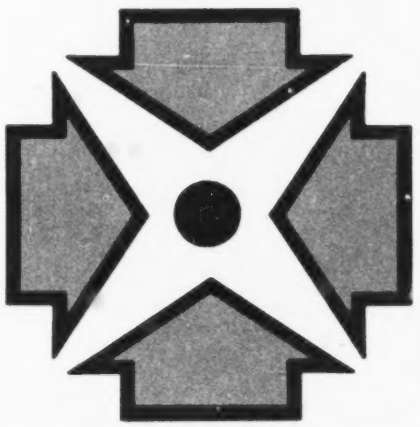

RURAL MANPOWER CENTER

REPORT NO. 26 DECEMBER 1971

PROJECT REMEDY

RURAL EDUCATION IN MICHIGAN ESPECIALLY FOR DISADVANTAGED YOUTH

(A research report on an experimental study to determine the effectiveness of in-service education in assisting vocational educators teach disadvantaged students in rural high schools.)

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Problem and Objective

The problem was to determine whether or not effectiveness of vocational education programs for disadvantaged students could be increased in rural high schools.

The bulk of research that has been conducted relating the education of disadvantaged students has occurred in urban areas. Solutions to the problem of educating disadvantaged students in densely populated areas often are not practical for sparsely populated rural areas which frequently do not have the resources of urban areas.

The major objective of the proposed study was to develop methods of providing effective vocational education for disadvantaged students in rural areas. The development of techniques to assist vocational educators acquire more favorable attitudes toward teaching disadvantaged students was included, as well as the development of methods to increase vocational educators knowledge of methods of identifying and teaching more effectively disadvantaged students.

Rationale for the Study

There has been much research in recent years that deals with working with disadvantaged students. Most of the work, such as Havighurst (6), Walker (10), and others have been conducted with disadvantaged students in urban areas. In general, Vocational Education programs for disadvantaged students been geared to urban areas, primarily because of the large concentrations of students in urban areas. Thus to a large extent dis-

advantaged rural youth have been ignored by general education programs as well as by vocational education programs.

Solutions developed in urban areas may not be assumed to solutions to the problems of rural areas. Schools in rural areas are generally smaller and often less well financed than urban and suburban schools. Thus programs for the disadvantaged that require more teachers, more equipment, more space, etc. are not always practical solutions for providing effective teaching in rural schools.

The Vocational Education Act of 1963 emphasized the responsibility of vocational educators to work with the disadvantaged. However, as a result of the recent evaluation of what vocational education has accomplished since 1963 in working with the disadvantaged, the U.S. Congress indicated that it was disappointed in the lack of progress in this area. Thus current legislation has focused more specifically on the responsibilities of vocational education for disadvantaged students. The vocational Education Amendments of 1968 states that 15 percent of vocational education funds must be spent on working with the disadvantaged.

It is clear a concerted effort must be made to emphasize the role of vocational education in meeting the needs of disadvantaged students. There are two main approaches to solving the problem of providing increased assistance to disadvantaged students. The first approach is to develop entirely new programs for disadvantaged students, create new vocational courses and sections, hire more teachers, and condemn our present programs as unable to cope with the problem. This has been the model that has been most often used during recent years. The problem with this approach is that it reaches few students and is very expensive. Headlines are achieved

for a short time but when experimental or supplemental monies are exhausted it fades in the twilight of good causes with little practical application remaining.

Perhaps a more effective approach toward meeting the needs of disadvantaged students in vocational education may be to work within the existing courses and sections. Shores (8) indicates that research has shown that there is little difference in the learning and adjustment of students in a homogenous or in a heterogeneous group. Research points out that the amount of learning and adjustment that takes place in either type of grouping is much more dependent on the teacher than on grouping of students. A good teacher in a heterogeneous atmosphere will generally be a good teacher in a homogeneous atmosphere, while a poor teacher in a heterogeneous atmosphere in likely to be a poor teacher in a homegeneous atmosphere. Thus rather than create new courses and sections for homogeneously grouped disadvantaged students why not work with teachers to help them become more effective teachers of disadvantaged students in their regular heterogeneously grouped classrooms.

There have been many advances in developing methods of teaching disadvantaged students. The present need appears to be one of sensitizing vocational educators to their responsibility for providing instruction for disadvantaged students. Also to help instructors to acquire the attitudes, understandings and skills to do an effective job teaching these students. They need help in identifying disadvantaged students within their existing classrooms and assistance in providing more effective instruction for these individuals.

This study was an attempt to determine whether or not more effective

vocational education programs for disadvantaged students in existing heterogenously grouped classrooms could be developed in rural areas through in-service education programs on how to teach the disadvantaged.

Procedure

Twenty schools which offered vocational education were chosen by random selection to participate in the study. The rural high schools selected were schools with less than 400 students in grades 9 through 12. Ten of the selected schools were chosen by random selection to be the experimental group and ten were chosen to be the control group. The schools were chosen after the fall session was in operation in order to insure that the students would be in heterogenously grouped classes. Project REMEDY staff members visited with the administrators in the schools to enlist their support of the program. One vocational teacher from each school was nominated by the Superintendent to participate in the project. All sample schools were located in the northwest part of peninsula of Michigan. One experimental school dropped out of the program because the program conflicted with his other school activities. The nine experimental schools who completed the project were:

Baldwin	Lake City
Bear Lake	McBain
Custer	Mesick
Freesoil	Pentwater
Hesperia	

The nine control schools who completed the project were:

Brethren	Morely
Evart	Newaygo
Farwell	Walkerville
Leroy	White Cloud
Manton	

The experimental group included vocational educators from the following program areas:

Vocational Agriculture --- one instructor

Home Economics --- two instructors

Industrial Education --- two instructors

Business Education --- three instructors

Disadvantaged vocational students within the classrooms of both experimental and control groups were identified as either educationally, culturally, economically, socially, and/or economically disadvantaged.

Youth involved in the study were considered to be disadvantaged if they met one of the following criteria:

1. Economically Disadvantaged - Families whose income is subsistance level or below; or whose income is unstable, or members of families that are affected by long-term, chronic unemployment; or members of unusually large families which tax the resources of the family bread-winner; or whose family is supported by public assistance; and who is family member of itinerant or migratory workers.
2. Culturally Disadvantaged - Students having limited experiences of the sort school personnels assume most students have had with their families; for instance, contact with social, cultural and governmental institutions. Some characteristics of a culturally disadvantaged child would be one who comes from homes which do not pass on to children the cultural patters of: (a. an elaborated language, (b. curiosity about selected aspects of their world, (c. the disposition to challenge authority with questions, (d. a drive to achieve in an intellectual sense.

3. Academically Disadvantaged - A student with a "D" or less grade average. Background of parents may be limited educationally.
4. Socially Disadvantaged - Students who are often found to be isolated from other class members. They usually have extremely limited opportunity to participate in school and community functions individually or with their families. They may belong to a different ethnic group than the one generally accepted (minority group); a member of a disrupted family and/or broken home, an in-migrant unadjusted to the new culture and mores.
5. Intellectually Disadvantaged - Those students who score one standard deviation below the mean on an achievement test; and with border-line or defective intelligence above Educationally Mentally Retarded level 50-70 I.Q. and below 90 I.Q. with other difficulties.

The experimental group met during the first part of December 1970 for the initial meeting of the treatment phase. During the initial meeting teachers were asked to identify problem areas in teaching disadvantaged students. As a result a course outline was developed which became the course outline for the in-service education programs. The following is a list of the problem areas identified:

IDENTIFYING THE DISADVANTAGED IN VOCATIONAL EDUCATION

1. What is a disadvantaged student?
2. Why should teachers identify the disadvantaged?
3. When should the disadvantaged be identified?
4. Who should be involved in identifying the disadvantaged?
5. How can a disadvantaged student be identified?
6. How can an economically disadvantaged student be identified?
7. How can a socially disadvantaged student be identified?
8. How can a culturally disadvantaged student be identified?
9. How can an academically or intellectually disadvantaged student be identified?

MEETING THE NEEDS OF DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. What is a need?
2. Why identify the needs of the disadvantaged?
3. When should these needs be identified?
4. What are some of these needs?
5. How are needs different from wants?
6. How are the needs of the disadvantaged different from needs of the non-disadvantaged?
7. How can each disadvantaged student's particular need (s) be identified?
8. How can teachers help students meet these needs?
9. How are instructional programs developed to meet needs?

MOTIVATING DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. Why do teachers need to motivate disadvantaged students?
2. When should disadvantaged students be motivated?
3. How can teachers motivate disadvantaged students?
4. How can teachers get students to learn to like to learn?
5. How can teachers motivate students to study something they have never seen?
6. What are some techniques that worked to motivate disadvantaged students?

BUILDING RAPPORT WITH DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. How can a teacher establish rapport with a disadvantaged student?
2. How can a teacher help develop a positive self-concept in a disadvantaged student?

COUNSELING DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. Should vocational teachers assume a guidance role?
2. Should the same guidance techniques be used with disadvantaged students as those used with non-disadvantaged students?
3. When does a vocational teacher have time for guidance?
4. Can "career guidance" and "personal guidance" be separated?
5. What are some of the guidance techniques a vocational teacher can use?
6. How can we assist disadvantaged students to develop goals?
7. Can the image of vocational education be improved?
8. Can something be done to divert the dropout?
9. What aids are available to help the vocational teacher in this role?

GROUPING DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. Should disadvantaged students be grouped heterogeneously or homogenously? Why or why not?

DEVELOPING A CURRICULUM FOR DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. What should be included in a curricula for disadvantaged students?
2. Should there be a separate curricula for the disadvantaged student?
3. Which comes first the subject matter or the student?
4. How do you develop a relevant curriculum?
5. Should work experiences or co-op be included?
6. How can small schools provide work experience programs for their students?
7. How do you start programs for disadvantaged students without the handicap of the "disadvantaged" label?
8. How do Area Vocational Skill Centers fit into programs for the disadvantaged?

SUCCESSFUL METHODS AND TECHNIQUES FOR TEACHING

DISADVANTAGED STUDENTS IN VOCATIONAL EDUCATION

1. What kinds of techniques are effective?
2. Why have special techniques for disadvantaged students?
3. How do you use the techniques in a heterogeneous classroom?
4. How do you gain support for these techniques in a school system?
5. What equipment is needed?
6. How much more trouble is it going to be to use these techniques?
7. What are these techniques?
8. Where do you find these methods and techniques?
9. How do these techniques differ from what teachers are already doing?
10. How do you insure that the disadvantaged develop the skills for working with fellow employees?

EVALUATING PROGRAMS FOR THE DISADVANTAGED IN VOCATIONAL EDUCATION

1. What is evaluation?
2. How is the performance of disadvantaged students evaluated?
3. What evaluation strategies are available?
4. How can we plan for program evaluation?
5. Why was the program initiated?
6. Who is the program designed to serve?
7. What is the program trying to accomplish?
8. What are we going to do differently to facilitate the desired outcomes of the program?
9. How will we know whether or not the program has made a difference?

FEDERAL RESOURCES AND VOCATIONAL EDUCATION FOR THE DISADVANTAGED

1. How do the 1968 Vocational Education Amendments relate to the disadvantaged?

The experimental group met once a week for 10 weeks from January through March. Some teachers had to drive as much as 70 miles one way to attend the meeting during the middle of Northern Michigan Winter but there were only three absences during the entire program.

Concurrent with the experimental part of the study the experimental group of teachers were providing input to the Project REMEDY Staff in developing manual entitled "Techniques For Teaching Disadvantage Students." As remuneration for assisting in the project each teacher in the experimental group received $75 per month. The funds were split so that each teacher had $400 to spend on items that would enchance the education of disadvantaged students in their classrooms. Teachers were free to decide what would be the most effective way they could use the funds to influence the education of their disadvantaged students. Some teachers used the fund for teacher aides, some individualized their instruction, some aided students in getting materials for projects, some took their disadvantaged students on field trips to business and industry as well as a variety of other techniques.

The Project REMEDY staff developed three instruments - two Likert-Type Attitude Scales, and a knowledge test. One scale was developed to determine the attitude of teachers toward teaching disadvantaged youth and the other scale was developed to determine the attitude of disadvantaged youth toward vocational education. The third instrument was developed to determine the knowledge of teachers about teaching disadvantaged youth. The instruments were field tested for reliability and validity.

The instruments were administered to the experimental and control groups during the Fall 1970 as a pretest. A post-test was administered in May 1971.

Three major hypotheses were analyzed in the study and are as follows:

H_1 Teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will score significantly higher on their knowledge of how to teach disadvantaged students than teachers who have not participated in an in-service program.

H_2 Teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will have a significantly more favorable attitude toward teaching disadvantaged students than teachers who have not participated in an in-service education program.

H_3 Disadvantaged students of teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will have significantly more favorable attitudes toward vocational education than disadvantaged students of teachers who have not participated in an in-service education program.

Findings

The data gathered for analysis primarily came from three instruments. The primary instruments were (1) a Likert Type Attitude Scale on the attitudes of vocational teachers about teaching disadvantaged students, (2) a multiple choice test of the knowledge of teachers about teaching disadvantaged students and (3) a Likert Type Attitude Scale on the attitude of disadvantaged students about vocational education.

Eighteen vocational teachers representing eighteen rural high school were involved in the study. Nine vocational teachers were in the experimental part of the study and nine were in the control group. The teachers in the experimental group taught a total of 463 students in their vocational classes. The teachers in the control group taught a total of 507 students in their vocational classes. Using the criteria outlined earlier in the publication, principals, counselors and other teachers were consulted to determine who the disadvantaged students were in the vocational classes of the selected teachers.

There were 149 students identified as disadvantaged students in the experimental schools. This represented 32 percent of the total students in the vocational classes of the nine teachers in the experimental group. In the control schools 141 students were identified as disadvantaged. This represented 27.8 percent of the students in the vocational classes of nine teachers in the control group.

There were five categories in which a student could be identified as disadvantaged. These categories were called (1) economically (2) intellectually (3) culturally (4) socially and (5) academically. Of the students identified as being disadvantaged in the experimental group 76

Table 1. Number and Percent of Students in Each Disadvantaged Category within the Experimental Group

	Economically Disadvantaged		Intellectually Disadvantaged		Culturally Disadvantaged		Socially Disadvantaged		Academically Disadvantaged		Total Number of Disadvantaged
School	N	%	N	%	N	%	N	%	N	%	N
1	2	10.5	7	36.2	1	5.2	4	21.0	5	26.3	11
2	6	28.5	2	9.5	4	19	7	33	2	9.5	11
3	8	34.7	-	-	8	34.7	5	21.7	2	8.6	11
4	17	21.5	11	13.9	20	25.3	19	24.0	12	15.1	25
5	0	0	9	52.90	-	-	5	29.4	3	17.6	14
6	17	34.6	10	20.4	11	22.4	7	14	4	8.1	29
7	23	22.5	12	11.7	25	24.5	28	27.4	17	16.6	35
8	0	-	1	20.0	2	40.0	-	-	2	40.0	5
9	3	18.7	3	18	1	6.2	4	25.0	5	31.2	8
Total	76	51	56	37	82	55	79	53	53	53	149

students which were 51 percent of the disadvantaged students were listed as being economically disadvantaged. The experimental group also had 37 percent of the group identified as intellectually disadvantaged, 53 percent culturally disadvantaged, 53 percent socially disadvantaged, and 53 percent academically disadvantaged. In the control schools 32 percent of the disadvantaged students were identified as economically disadvantaged, 48 percent were intellectually disadvantaged, 36 percent were culturally disadvantaged, 40 percent were socially disadvantaged and 42 percent were academically disadvantaged.

The students identified in each of the categories outlined above were not necessarily different students. On the contrary many students were identified in two or more categories. In both the experimental and control groups disadvantaged students were found to be identified on the average in slightly more than two categories per student. More specifically in the experimental group 40.8 percent of the disadvantaged students were identified in only one category, 20.6 percent were identified in two categories, 21.2 percent were identified in three categories, 4.3 percent were identified in four categories, and 15 percent were identified as being disadvantaged in all five categories. In the control group 39.3 percent of the students who were identified as disadvantaged were identified in only one category, 27.6 percent were identified in two categories, 24.8 percent were identified in three categories, 8 percent were identified in four categories and 3.4 percent were identified as being disadvantaged in all five categories.

The data presented above tends to reinforce the concept that disadvan-

Table 2. Number and Percent of Students in Each Disadvantaged Category within the Control Group

	Economically Disadvantaged		Intellectually Disadvantaged		Culturally Disadvantaged		Socially Disadvantaged		Academically Disadvantaged		Total Number of Disadvantaged
School	N	%	N	%	N	%	N	%	N	%	N
1	6	21.4	7	25.0	6	21.4	4	14.2	5	17.8	11
2	-	-	11	52.3	2	9.5	7	33.3	11	52.3	11
3	11	20.0	16	29.0	15	27.5	10	18.1	3	5.4	23
4	4	11.4	10	28.5	8	22.8	6	17.1	7	20.0	17
5	2	10.0	-	-	1	5.0	2	10.0	15	75.0	14
6	-	-	1	20.0	2	40.0	1	2.0	1	20.0	2
7	5	11.1	6	13.3	5	11.1	16	35.5	13	28.9	25
8	11	18.3	16	26.6	5	8.3	8	13.3	15	25	25
9	7	36.8	1	5.2	8	42.1	3	15.7	-	-	13
Total	46	32	68	48	52	36	57	40	60	42	141

Table 3. The Number of Categories In Which Disadvantaged Students Identified by Participating Schools.

	Disadvantaged in one category		Disadvantaged in two categories		Disadvantaged in three categories		Disadvantaged in four categories		Disadvantaged in five categories	
	N.	%	N	%	N	%	N	%	N.	%
Experimental Schools	60	40.8	30	20.6	31	21.2	6	4.3	22	15
Control Schools	55	39.3	38	27.6	33	24.8	11	8	4	3.4

taged students have many problems rather than easily identifiable and easily remedied problems. If a student is having a problem in one category he is also likely to be having a problem in other categories.

Test of Hypotheses

At the end of the treatment phase of the study students and teachers in both experimental and control schools were administered the instruments to determine if the in-service education was a significant imput in the education of disadvantaged students in rural high school.

The first hypothesis to be tested was whether teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will score significantly higher on their knowledge of how to teach disadvantaged students than teachers who have not participated in an in-service education program. The hypothesis was converted to its null form and tested for significance with a one way analysis of covariance. Mean scores on the knowledge test could range from 0 to 33.

The post test mean scores on the knowledge test for teachers in the experimental schools were 17.5 while the control schools mean score was 12.1. The analysis of covariance revealed on F ratio of 7.40 which was significant at the .01 level. Thus the null hypothesis was rejected and it was accepted that participation in in-service education does significantly increase the knowledge of teachers on methods of teaching disadvantaged students over those teachers who do not participate in in-service education.

Table 4. A Comparison of Mean Teacher Knowledge Scores on Teaching Disadvantaged Students by Vocational Teachers Who Participated in the Experimental In-Service Education and Vocational Teachers Who Did not Participate in In-Service Education Program.

Group	Mean of Knowledge about Teaching Disadvantaged Youth	F	Significance
Experimental	17.5	7.40	.01
Control	12.1		

Hypothesis two stated that teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will have significantly more favorable attitudes toward teaching disadvantaged students than teachers who have not participated in an in-service education program. The hypothesis was converted to its null form and tested with a one analysis of covariance.

The Likert Type Attitude test was used to measure the attitudes of teachers. A score of 1 to 1.5 was considered to be very favorable, from 1.5 to 2.5 was favorable, from 2.5 to 3.5 unfavorable and 3.5 to 4 was very unfavorable attitudes. The post test mean scores of teachers in the experimental group was 1.92. The post test score for the control group was 2.02. Both the experimental and control teachers were favorable in their attitude toward teaching disadvantaged students.

The results of the analysis of covariance indicated that an F ratio of 1.10 was not significantly different. Thus the null hypothesis was

accepted, there was no difference in the attitude of teachers about teaching disadvantaged students whether or not the teachers had participated in in-service education. However, before discounting the effects of in-service education on the attitudes of teachers it should be noted that both groups of teachers had attitudes score that were favorable.

Table 5. A Comparison of Post Treatment Mean Attitude Scores of Experimental and Control Vocational Teachers about Their Attitudes Toward Teaching Disadvantaged Students

Group	Mean Post Test Attitude Score	F	Significance
Experimental	1.92	1.10	.31
Control	2.02		

The third hypothesis to be examined was that disadvantaged students of teachers who participate in an in-service education program on how to teach disadvantaged students in vocational education will have significantly more favorable attitudes toward vocational education than disadvantaged students of teachers who have not participated in an in-service education program. The hypothesis was converted to its null form and tested for significance with a t test. Students in the experimental and control group responded on a pre and post test Likert Type Attitude Scale. A score of from 1-1.5 was very favorable, from 1.5 - 2.5 favorable, from 2.5 to 3.5 unfavorable and from 3.5 to 4 very unfavorable. The mean score for the students in the experimental schools was 2.17 and the mean for the control schools was 1.96.

The pre and post test were analyzed to determine the direction either positive or negative, the attitude of students had gone after the experimental vocational teachers had been participants in an in-service education program on how to teach the disadvantaged. In the experimental schools 63 students which were 44 percent of the disadvantaged students moved in a positive direction. In the control schools 45 students which were 34 percent of the disadvantaged students moved in a positive direction. Six students in the experimental schools and eight students in the control schools on the per and post test scores remained at the same level.

Table 6. Number of Disadvantaged Students Changing Attitudes Toward Vocational Education Negative Direction from Pre Test to Post Test on the Likert Type Attitude Scale

Experimental Group			Control Group		
Schools	Positive	Negative	Schools	Positive	Negative
1	5	6	1	3	8
2	5	6	2	7	2
3	5	5	3	6	15
4	13	12	4	4	13
5	7	7	5	6	7
6	13	14	6	1	1
7	2	5	7	7	18
8	11	23	8	7	16
9	2	3	9	4	7
Total	63	81		45	87

The result of the "t" test revealed a "t" of 2.32 which was significant at the .05 level. Thus the null form of the hypothesis was rejected and the alternative hypothesis accepted that participation by vocational teachers in an in-service education course on how to teach disadvantaged students will influence disadvantaged students to have a more positive attitude toward vocational education.

Table 7: Sample Correlation Matrix of Knowledge of Teacher about Teaching Disadvantaged Youth and the Attitude of Disadvantaged Students toward Vocational Education

	Teacher Knowledge about Teaching Disadvantaged Students	Disadvantaged Student Attitude Toward Vocational Education	Extended Disadvantaged Student Attitude Toward Vocational Education
Teacher Knowledge	1.00		
Disadvantaged Students Attitude	.10	1.00	
Extended Disadvantaged Student Attitude	.38	.31	1.000

A final feature of the analysis of the study was the relationship between knowledge of teachers about teaching disadvantaged students and the attitude of disadvantaged students toward vocational education. As the sample correlation matrix in Table 7 shows as the knowledge of teachers about teaching disadvantaged students increased the attitude of disadvantaged students became more positive toward vocational education.

Conclusions

The problem for this study was to determine whether or not the effectiveness of vocational education programs for disadvantaged students could be increased through an in-service education program. The variables used in the study as indicators of effective programs were (1) the knowledge of teachers about teaching disadvantaged students (2) the attitude of teachers toward teaching disadvantaged youth and (3) the attitude of disadvantaged toward vocational education.

The results of the study indicate that an in-service education program for vocational educators on how to teach disadvantaged students can significantly increase the effectiveness of vocational education for disadvantaged students in a heterogeneous classroom. Specifically it was discovered that teachers who participate in an in-service education program on how to teach the disadvantaged attain scores significantly higher on their knowledge of how to teach disadvantaged students than teachers who have not participated in an in-service education program. The study also revealed that disadvantaged students of teachers who participated in the in-service education program developed significantly more positive attitudes toward vocational education than did disadvantaged students of teachers who did not participate in the in-service program. It was also noted that there is a positive correlation between the attitude of disadvantaged students toward vocational education and the knowledge of teachers about how to teach disadvantaged students. The greater the knowledge of teachers about teaching disadvantaged students the more positive the attitude of disadvantaged students toward vocational education.

Another conclusion that can be drawn from the data is that there are quite a large percentage of rural vocational education students that can be classified as disadvantaged students. However there were often not enough disadvantaged students in any one class to justify a separate class to meet the needs of disadvantaged students. The only practical method of providing more effective vocational education for disadvantaged youth was to provide vocational teachers with more knowledge on how the disadvantaged students and perhaps more funds that could be directly used to enhance the education of their disadvantaged students.

Recommendations

The findings of the study lead to the following recommendations:

1. That programs for the disadvantaged in small rural high schools be a part of the regular on going vocational program.
2. That vocational teachers in rural high schools have available in-service education on how to teach disadvantaged students in their classes.
3. That funds be made available to rural vocational education teachers who agree to participate in in-service education in order to enhance the education of the disadvantaged students in their classrooms.
4. That a system be developed to recognize those teachers who make special efforts to provide effective learning situation for disadvantaged youth.

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